

STATE OF SOUTH CAROLINA, )  
 )  
COUNTY OF RICHLAND )  
 )  
Crystal Caughman as Personal )  
Representative of the Estate of )  
Maiya Caughman, )  
Plaintiff, )  
 )  
vs. )  
 )  
Atrium Finance I, LP, Atrium )  
Hospitality LP, Charles Johnson )  
Defendant. )

IN THE COURT OF COMMON PLEAS

SUMMONS

FILE NO.

TO THE DEFENDANT ABOVE-NAMED: L

YOU ARE HEREBY SUMMONED and required to answer the complaint herein, a copy of which is herewith served upon you, and to serve a copy of your answer to this complaint upon the subscriber, at the address shown below, within thirty (30) days after service hereof, exclusive of the day of such service, and if you fail to answer the complaint, judgment by default will be rendered against you for the relief demanded in the complaint.

Columbia, South Carolina

s/ James M. Griffin

Plaintiff/Attorney for Plaintiff

Dated: August 26, 2021

Address: James M. Griffin  
Griffin Davis LLC  
P.O. Box 999  
Columbia, SC 29202

STATE OF SOUTH CAROLINA )  
 ) IN THE COURT OF COMMON PLEAS  
COUNTY OF RICHLAND )  
  
Crystal Caughman as Personal )  
Representative of the Estate of )  
Maiya Caughman, ) COMPLAINT  
 ) (SURVIVAL ACTION)  
Plaintiff, )  
 )  
v. )  
Atrium Finance I, LP, Atrium )  
Hospitality LP, Charles Johnson )  
 )  
Defendants. )  
 )

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The Plaintiff, above-named, complaining of the Defendants, above-named, alleges as follows:

1. Plaintiff is the duly appointed personal representative of the Estate of Maiya Caughman, ("the Estate"), having been appointed by the Sumter County Probate Court on June 21, 2021.
2. Plaintiff brings this action pursuant to the provisions of the South Carolina Survival Statute, S.C. Code §15-5-90.
3. Defendant Atrium Finance I LP (Atrium) is a Delaware limited partnership and owns the Embassy Suites Hotel and Conference Center (Embassy Suites-Columbia) located in Richland County South Carolina at 200 Stoneridge Drive, Columbia, South Carolina.
4. Defendant Atrium Hospitality LP (Atrium Hospitality) is a Delaware limited partnership headquartered in Alpharetta, Georgia, doing business in Richland County, South Carolina and manages the Embassy Suites-Columbia.

5. Defendant Charles Johnson is a citizen and resident of Richland County, South Carolina and is employed by Defendant Atrium Hospitality as the General Manager of the Embassy Suites Columbia.
6. At all times relevant to this action, Defendant Johnson was acting within the course and scope of his employment with Defendant Atrium Hospitality.

### **JURISDICTION AND VENUE**

7. Jurisdiction over the Defendant Atrium in South Carolina is proper under S.C. Code Sections 36-2-803 because the claims alleged herein arise from the Defendants' owning real property and doing business in this State.
8. Jurisdiction over the Defendant Atrium Hospitality in South Carolina is proper under S.C. Code Sections 36-2-803 because the claims alleged herein arise from Defendant's doing business and committing tortious acts in this State.
9. Defendant Johnson is a citizen and resident of Richland County and is therefore subject to the jurisdiction of this Court.
10. Venue is appropriate in Richland County pursuant to S.C. Code Section 15-7-30 et seq. because Defendant Johnson resides in Richland County and the most substantial part of the alleged act or omission giving rise to the causes of action occurred in Richland County.

### **SUBSTANTIVE ALLEGATIONS**

11. On February 8, 2021, Plaintiff Crystal Caughman (Crystal) checked into the Embassy Suites-Columbia hotel with her two children, Maiya age 4 and Christian, age 2.

12. Crystal was an employee of the Embassy Suites-Columbia and was provided an employee discount for a suite.
13. Crystal and her two children were assigned a room on the seventh floor of the hotel where other employees were also assigned.
14. Crystal's daughter Maiya was an extremely active young girl and would on occasion wander out of the suite unaccompanied without Crystal's knowledge or permission.
15. Maiya was especially drawn to the water fountain on the atrium floor and would often lean through and over the balcony railing to watch the fountain spray seven floors below.
16. Crystal became concerned about Maiya's safety on the seventh floor because of the Embassy Suites-Columbia had an open atrium, and the balcony was designed such that young children, such as Maiya, could easily climb over or through the railing and fall.
17. Crystal expressed her safety concerns to Defendant Johnson and other employees of Atrium Hospitality and requested that she be relocated to a room on the ground floor.
18. Defendant Johnson and his subordinates refused to relocate Crystal and her small children to a lower floor.
19. In the early morning hours of February 20, 2021, unbeknownst to Crystal, Maiya wandered out of the hotel suite while Crystal was changing Christian's diaper and dressing him for bed in the suite's back bedroom.

20. Within minutes of wandering out of the suite, four-year old Maiya while playing on the balcony, fell seven floors landing on the concrete flooring below, suffering life ending injuries.
21. The balcony is comprised a stucco type flat wall with open rail sections. The open rail sections consist of iron railing attached to a base.
22. The base height is approximately 16 and 1/2 inches and 10-12 inches wide, and can easily be used as a booster step for a toddler to climb and over the railing which is less than 24 inches in height.
23. True and accurate photos of the stucco type wall are attached hereto as **Exhibit A**.
24. True and accurate photos of the opened section with aluminum railing is attached hereto as **Exhibit B**.
25. The balcony at the Embassy Suites-Columbia is unreasonably dangerous and defective in one or more of the following particulars:
  - a. The stucco wall portion of the balcony does not comply with the applicable building code because it measures approximately 39 inches in height and code requires the wall to be at least 42 inches in height. See, IBC 1015.3
  - b. The aluminum railing portion of the balcony does not comply with the applicable building code because it measures approximately 24 inches in height above the 10-12 inch base, approximately 40 and 3/4 inches above the walking surface, and code requires the wall to be at least 42 inches in height. See, IBC 1015.3

- c. The balusters do not comply with the applicable building code because they measure approximately 5.5 inches in width, and applicable code requires the balusters to be no more than 4 inches in width, See IBC 1015.4
26. A true and accurate copy of a photo depicting the measurement of the height of the wall portion of the balcony is attached hereto as **Exhibit C**.
27. A true and accurate copy of a photo depicting the measurement of the height of the base upon which the railing is mounted is attached hereto as **Exhibit D**.
28. A true and accurate copy of a photo depicting the measurement of the height of the rail portion of the balcony is attached hereto as **Exhibit E**.
29. A true and accurate copy of a photo depicting the measurement of the width between the balusters is attached hereto as **Exhibit F**.
30. A young child of tender years, such as Maiya, who has not developed the judgment or awareness to appreciate the dangers of climbing in and around the balcony, can easily fall over or through balcony to their death in a matter of minutes because of the unreasonably dangerous and defective design.
31. Defendants knew, or in the exercise of reasonable care, should have known that it was dangerous to lodge families with small children on the upper floors of the Embassy Suites-Columbia hotel because a similar incident occurred in July 2015 at the Embassy Suites-Anaheim California where a three-year old girl fell to her death.

32. The toddler's death from the fall at the Embassy Suites-Anaheim California hotel was widely reported in news outlets, as evidenced by the article attached hereto as **Exhibit G**.
33. In addition, Defendants knew, or in the exercise of reasonable care, should have known that the building code requirements for the width between balusters was reduced from 6 inches to 4 inches because studies established that children younger than 6 years of age can easily slip through 6-inch balusters.
34. In an article published by the American Academy of Pediatrics in 2001, the authors observed, "*widely spaced rails are ineffective barriers because they permit a child's body to slip through. Virtually all children younger than 6 years old can slip through a 6-inch opening, and none older than 1 can slip through a 4-inch opening.*" Falls From Heights: Windows, Roofs and Balconies, Pediatrics, Vol. 107, No. 5, @ p.1188, attached as **Exhibit H**.

**FIRST CAUSE OF ACTION  
(NEGLIGENCE, GROSS NEGLIGENCE, RECKLESSNESS)**

35. Plaintiff re-alleges the preceding paragraphs.
36. Defendants individually and through their officers, agents and employees, were negligent, grossly negligent, and reckless in one or more of the following particulars:
  - a. Housing Plaintiff Caughman and her decedent Maiya on the seventh floor of Embassy Suites-Columbia which was unreasonable dangerous because the design and construction of the balcony failed to comply with the applicable building codes;

- b. Refusing Plaintiff Caughman's request to relocate her, the decedent Maiya and her son Christian to a ground level floor after being informed that Plaintiff was concerned about Maiya's safety;
- c. Operating the Embassy Suites-Columbia hotel in violation of South Carolina building codes governing the height and width of balcony guards, railing and balusters;
- d. Failing to erect barriers to prevent young children from falling over or slipping through the balconies adjacent to the guest rooms located on the upper floors, to include the seventh floor;
- e. Failing to comply with the applicable building codes governing balconies of the type in use the Embassy Suites-Columbia hotel.

37. Plaintiff's decedent suffered emotional distress and trauma as she fell through the air for more than 100 feet, before crashing to the floor of the atrium.

38. Plaintiff's decedent experienced excruciating pain and suffering upon crashing to the floor of the atrium before she died from significant blunt force injuries to her head, torso, and extremities.

39. Defendants Atrium Hospitality is vicariously liable for the acts and omission of its employees, including the Defendant Johnson.

40. Defendant Atrium is liable for the acts and omissions of its agent Defendant Atrium Hospitality.

41. As a proximate result of Defendants' negligent, reckless and grossly negligent conduct, and that of Defendants' agents and employees, Plaintiff's decedent experienced conscious pain and suffering.

42. Defendants are therefore liable to the Estate for actual damages in an amount to compensate the Estate for the conscious distress, trauma, pain and suffering experienced by Maiya before her death in an amount to be determined.
43. Defendants are also liable to the Estate for an award of punitive damages in an amount to punish the Defendants for their grossly negligent and reckless conduct and to deter other hotel owners and operators from operating hotels in violation of South Carolina safety codes.

**SECOND CAUSE OF ACTION  
(NEGLIGENCE, GROSS NEGLIGENCE AND RECKLESSNESS PER SE)**

44. Plaintiff re-alleges the preceding paragraphs.
45. International Building Code Sections 1015.3 and 1015.4 have been adopted by South Carolina and Richland County, for the safety of guests and to prevent falls of the type experienced by Maiya.
46. Defendants' operation of the Embassy Suites-Columbia hotel in violation of the International Building Code 1015.3, which has been adopted by South Carolina and Richland County is negligence per se.
47. As a proximate result of Defendants' negligent, reckless and grossly negligent conduct, Plaintiff's decedent experienced conscious pain and suffering.
48. Defendants are therefore liable to the Estate for actual damages in an amount to compensate the Estate for the conscious distress, trauma, pain and suffering experienced by Maiya before her death in an amount to be determined.
49. Defendants are also liable to the Estate for an award of punitive damages in an amount to punish the Defendants for their grossly negligent and reckless

conduct and to deter other hotel owners and operators from operating hotels in violation of South Carolina safety codes.

**THIRD CAUSE OF ACTION  
(ATTRACTIVE NUISANCE)**

50. Plaintiff re-alleges the preceding paragraphs.
51. Defendants knew or had reason to know that children of tender years would explore the balcony areas of the upper floors of the Embassy Suites-Columbia hotel, unaccompanied by their parents, and would climb over and through the balcony to observe the atrium and water fountain below.
52. Defendants knew or had reason to know that the design of the balcony and the ease by which young children can climb over or through the railings and wall poses an unreasonable risk of death or serious bodily injury to such children.
53. Children of tender years, to include four year old children such a Maiya, because of their youth are not able to appreciate or realize the risk involved with playing or meddling around and looking over or through the balcony wall and railing.
54. The utility of maintaining the unreasonably dangerous and defective balcony and the burden of eliminating the dangerous condition is slight as compared with the risk to children involved.
55. Defendants failed to exercise reasonably care eliminate the danger to Maiya and other children of similar age and experience.
56. Defendants are therefore liable to the Estate for actual damages in an amount to compensate the Estate for the conscious distress, trauma, pain and suffering experienced by Maiya before her death in an amount to be determined.

57. Defendants are also liable to the Estate for an award of punitive damages in an amount to punish the Defendants for their grossly negligent and reckless conduct and to deter other hotel owners and operators from operating hotels in violation of South Carolina safety codes.

**WHEREFORE**, the Plaintiff prays for judgment against the Defendant by way of damages as alleged above; for actual and punitive damages in an amount to be determined; for the costs and disbursements of this action; and for such other and further relief as the Court may deem just and proper.

JURY TRIAL DEMANDED

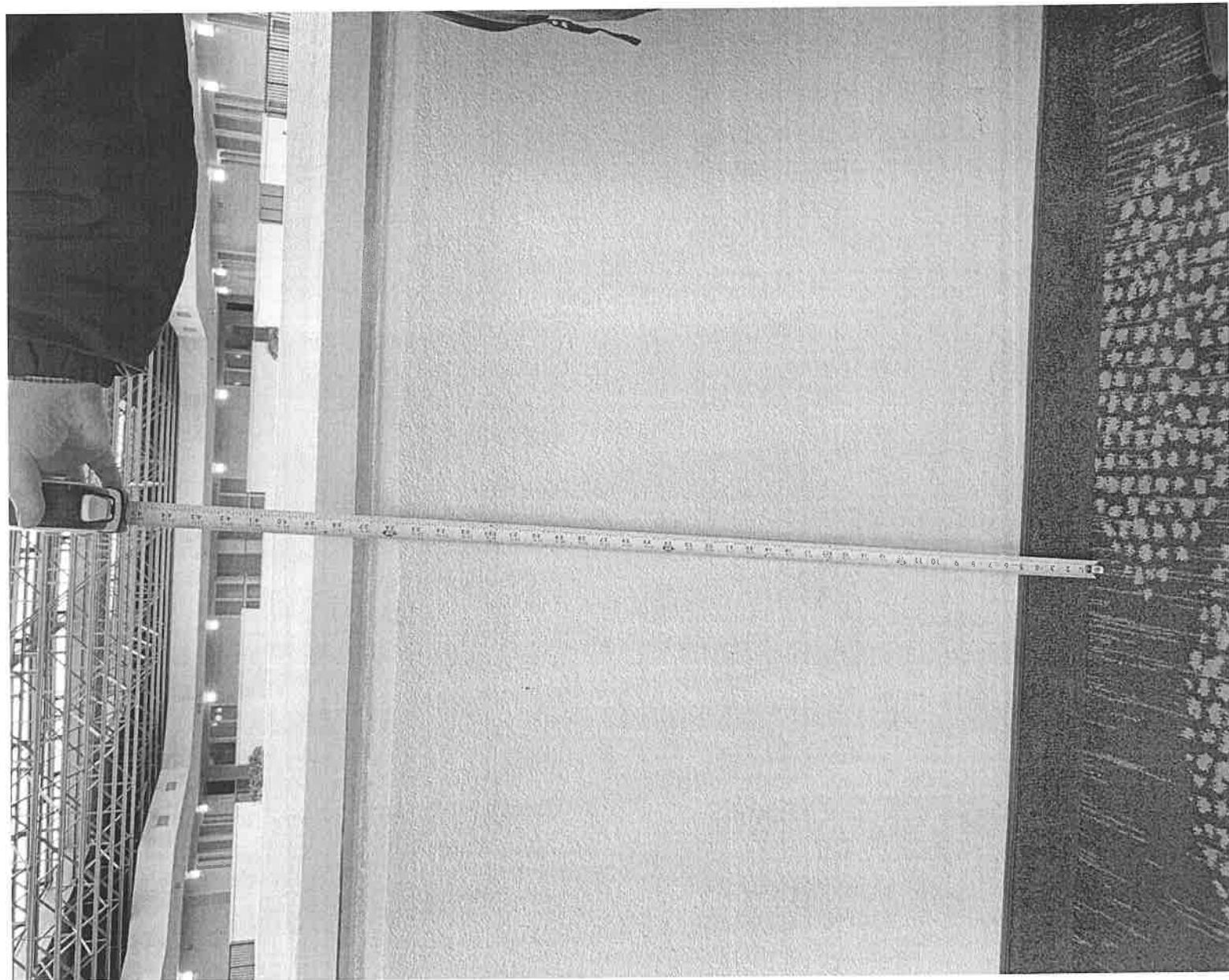
/s/ James M. Griffin  
James M. Griffin (S.C. Bar No. 9995)  
Badge Humphries (S.C. Bar No. 72904)  
Margaret N. Fox (S. C. Bar No. 76228)  
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August 26, 2021

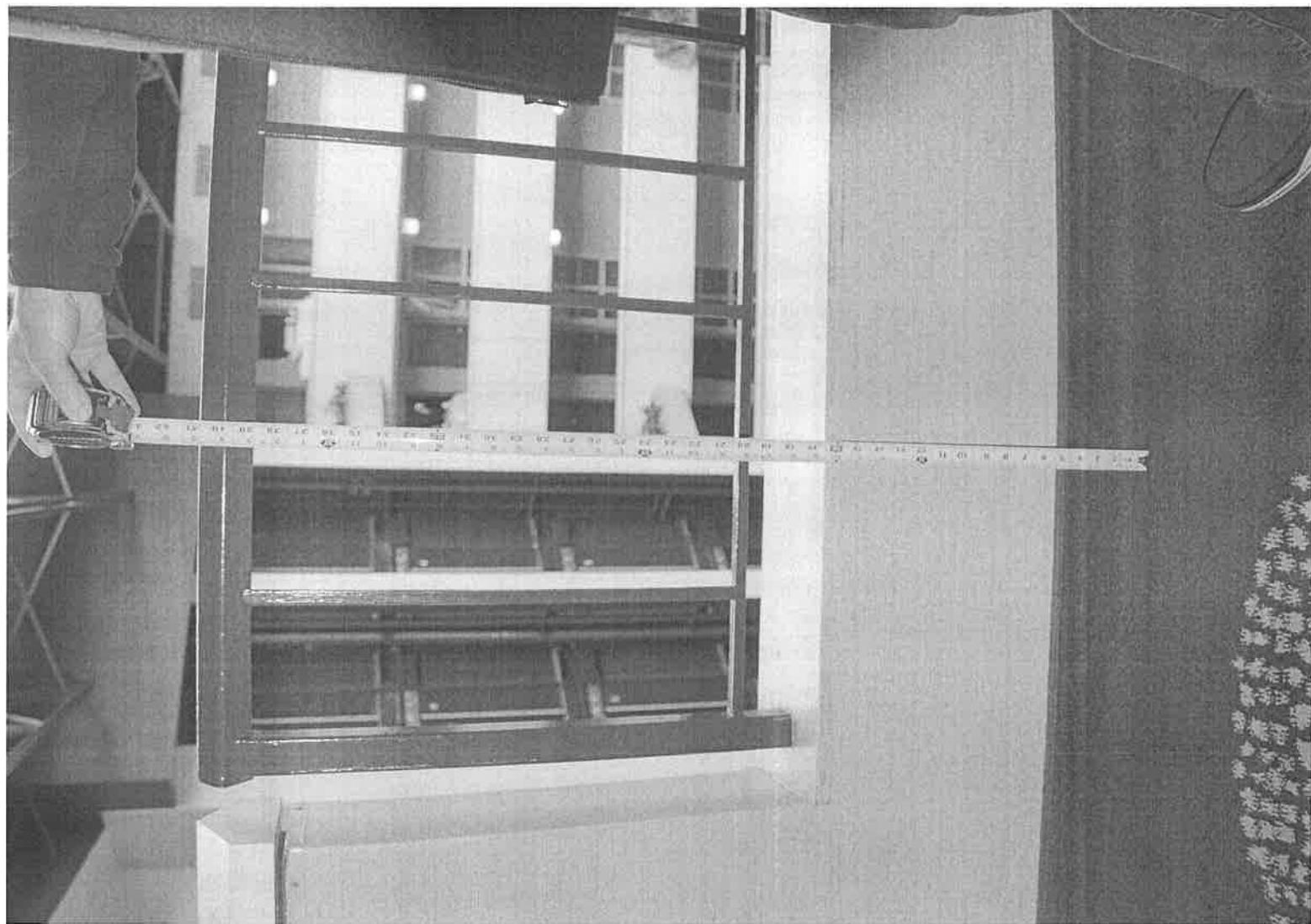
# Exhibit A

ELECTRONICALLY FILED - 2021 Aug 26 3:58 PM - RICHLAND - COMMON PLEAS - CASE#2021CP4004365



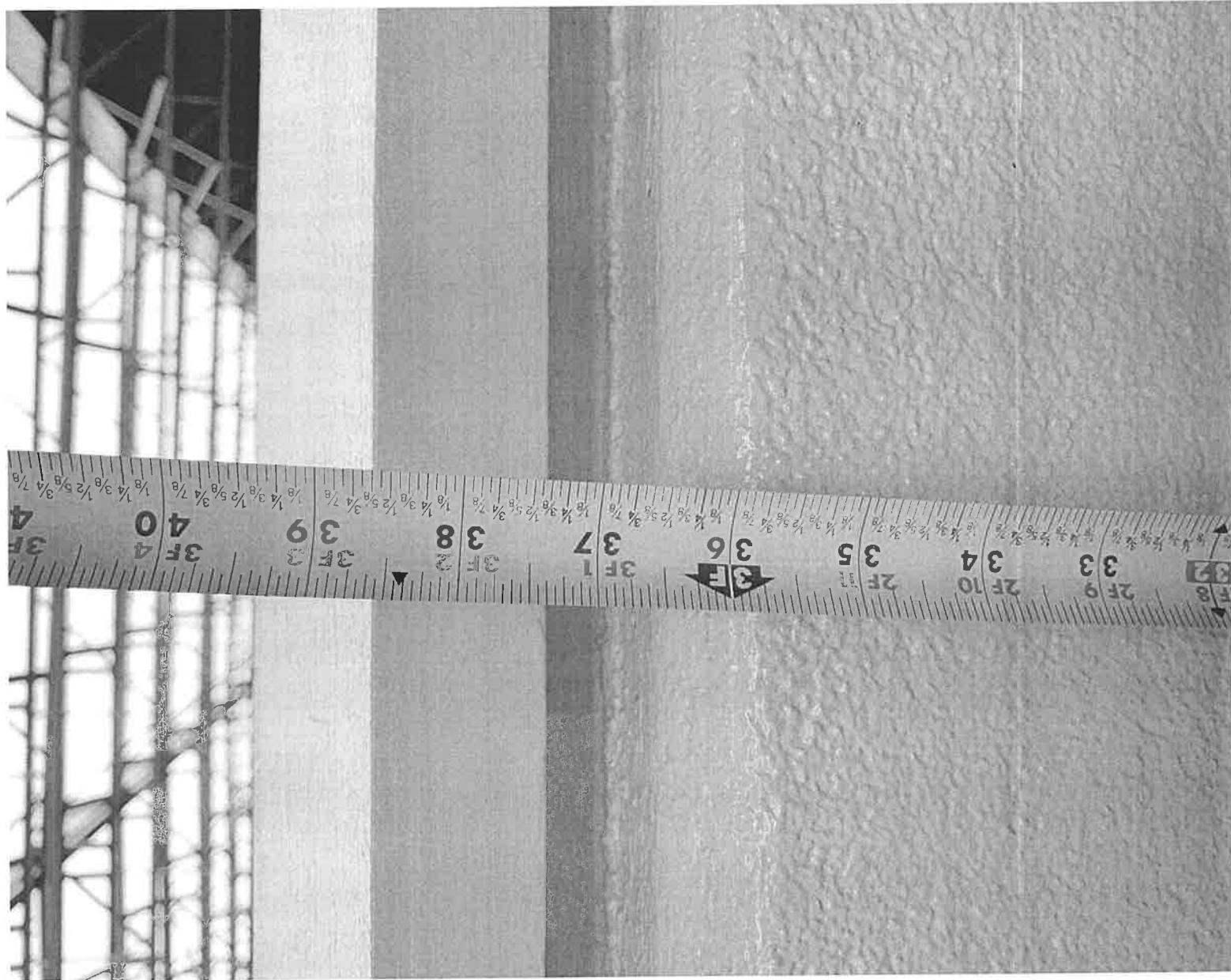
# Exhibit B

ELECTRONICALLY FILED - 2021 Aug 26 3:58 PM - RICHLAND - COMMON PLEAS - CASE#2021CP4004365



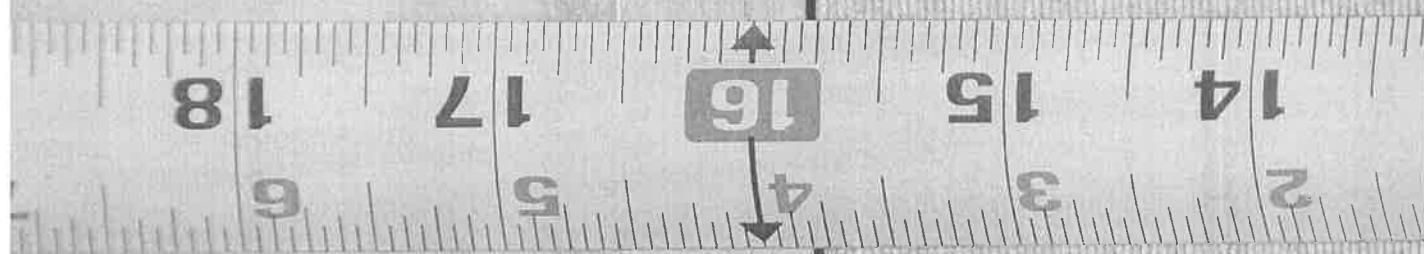
# Exhibit C

ELECTRONICALLY FILED - 2021 Aug 26 3:58 PM - RICHLAND - COMMON PLEAS - CASE#2021CP4004365



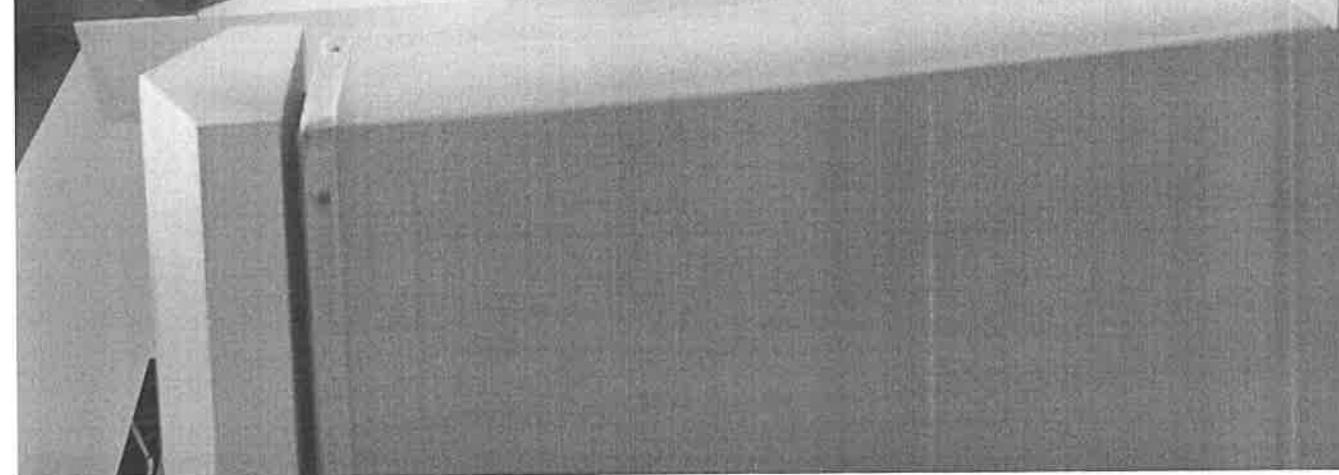
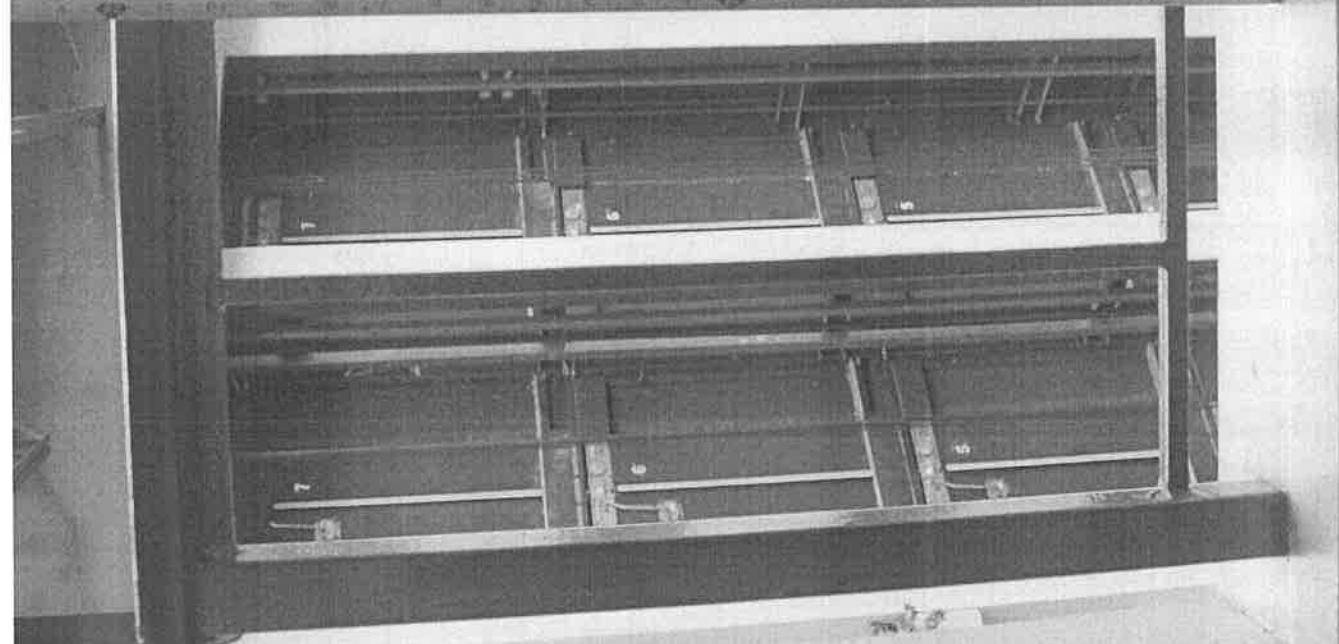
# Exhibit D

ELECTRONICALLY FILED - 2021 Aug 26 3:58 PM - RICHLAND - COMMON PLEAS - CASE#2021CP4004365



# Exhibit E

ELECTRO - 2021-09-24 10:58 PM, RICHLAND, COMMON PLEAS, CASE 2021CP4004365



# Exhibit F

ELECTRONICALLY FILED - 2021 Aug 26 3:58 PM - RICHLAND - COMMON PLEAS - CASE#2021CP4004365



# Exhibit G

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**LIVE NOW / KTLA 5 News at Noon**

**WEATHER ALERTS** / There are 12 areas under alert. Click for alert details.

## Visiting Disneyland With Family

by: John A. Moreno, Anthony Kurzweil

Posted: Jul 20, 2015 / 11:05 AM PDT / Updated: Jul 20, 2015 / 11:05 AM PDT

*This is an archived article and the information in the article may be outdated. Please look at the time stamp on the story to see when it was last updated.*

[protected-iframe id="ab86f36db07bd47e2f460ea7a85965bc-41641936-52137988" info="http://KVVU.images.worldnow.com/interface/js/WNVideo.js?rnd=584150; hostDomain=www.fox5vegas.com;playerWidth=630;playerHeight=385; isShowIcon=true;clipId=11696578;flvUri=;partnerclipid=;adTag=Video%2520Player; advertisingZone=;enableAds=true;landingPage=;islandingPageoverride=false; playerType=STANDARD\_EMBEDDEDscript;controlsType=fixed" ]

A 3-year-old girl died over the weekend after falling from a walkway at an Embassy Suites hotel in Anaheim, where she and her family visited Disneyland, officials and a family member said. X

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County coroner's office news release.

Stephanie Martinez, 3, is seen with the Disney character Ariel in a photo published on a GoFundMe page.



The fall was from a fifth-floor corridor walkway, the Orange County Register reported.

"It appears to be a very tragic accident," Eric Trapp, a spokesman with the Anaheim Police Department told the newspaper.

Martinez was taken to UCI Medical Center, where she was pronounced dead just before 7 p.m., the coroner's office stated.

The incident occurred during a family vacation that included a visit to Disneyland, the girl's cousin, Eddie Fraire, told KVVU.

After taking a shower in their hotel room, Stephanie's mother walked out of the

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"Her mom came out to check up on her, he said. She saw her hanging on the rails. She screamed, so the little girl got scared and fell down from the fifth floor."

According to Fraire, he and Stephanie's father were downstairs at the time and witnessed the fall. They rushed toward the child in an attempt to catch her but were unable to do so in time, Fraire said.

A GoFundMe page has been created to help raise money for Stephanie's funeral expenses.



**KTLA 5 News**

about 6 years ago



Three-year-old Stephanie Martinez died in a tragic accident after she and her family traveled from their home in Las Vegas and visited Disneyland, where she sported Minnie Mouse ears and posed with Ariel.

The young girl fell to her death from a fifth-floor walkway at the Anaheim hotel where she was staying with her parents, police said.

A GoFundMe page has been set up to raise money for Stephanie's funeral expenses... See More



13K

27K

33K

[Suggest a Correction](#)



# Exhibit H

# AMERICAN ACADEMY OF PEDIATRICS

Committee on Injury and Poison Prevention

## Falls From Heights: Windows, Roofs, and Balconies

**ABSTRACT.** Falls of all kinds represent an important cause of child injury and death. In the United States, approximately 140 deaths from falls occur annually in children younger than 15 years. Three million children require emergency department care for fall-related injuries. This policy statement examines the epidemiology of falls from heights and recommends preventive strategies for pediatricians and other child health care professionals. Such strategies involve parent counseling, community programs, building code changes, legislation, and environmental modification, such as the installation of window guards and balcony railings.

**ABBREVIATIONS.** CPSC, US Consumer Product Safety Commission; AAP, American Academy of Pediatrics.

### INTRODUCTION

**A**fter motor vehicle-related injuries, falls of all kinds are the second leading cause of death from unintentional injury in the United States, accounting for more than 13 000 deaths during 1998 among persons of all ages, 126 of which were children 14 years and younger.<sup>1</sup> Falls are the leading cause of nonfatal injury, with several hundred thousand hospitalizations annually and almost 9 million persons treated in emergency departments who do not require hospitalization.<sup>2</sup> Although falls are the most common cause of childhood injury, these injuries are rarely fatal, in contrast with a high rate of fall-related mortality among the elderly.<sup>1,3,4</sup> Fatalities occur primarily when children fall from great heights (greater than 2 stories or 6.7 m [22 ft]), or when the head of a child hits a hard surface, such as concrete. Falls from heights greater than 2 stories can include falls from roofs, windows, and balconies.<sup>5-7</sup> The purpose of this statement is to review the epidemiology of falls from heights in children and to suggest strategies for prevention.

Falls from heights are a major problem in urban areas, especially for children living in multiple-story, often deteriorating, low-income housing.<sup>5-7</sup> In some urban areas, falls have represented up to 20% of the deaths of children from unintentional injury, as compared with an average of 1% to 4% nationally.<sup>1,8,9</sup> The majority of fall-related fatalities among children are associated with falls from heights, most from 3 stories or higher. Falls from 1 or 2 stories are more frequently nonfatal, but second-story falls may cause

serious injuries (D. Tinsworth, US Consumer Product Safety Commission [CPSC], written communication, June 13, 1994).<sup>5,7</sup> The falls from greater heights tend to cluster in the summer months, presumably because windows are more likely to be open and children are more likely to be playing on fire escapes, roofs, and balconies.<sup>5,7,8,10</sup> Although the average age of patients injured in falls from heights is approximately 5 years, the age distribution is bimodal; preschool children usually fall from windows, and older boys fall from dangerous play areas, such as rooftops and fire escapes.<sup>5,6,8,11</sup> African American and Latino children are overrepresented in published series of falls from heights in which race or ethnicity is reported, probably reflecting their increased likelihood of living in urban, multiple-story low-income housing.<sup>11,12</sup> Overall, fall-related injuries to boys outnumber those to girls by approximately 1.5:1 to 2:1, as with most other injuries.<sup>5,7,8,10-16</sup>

The nature of the injuries to children when they fall from heights has been studied extensively.<sup>11,13-17</sup> Data from the CPSC on the approximately 4700 children who were examined in emergency departments because of falls from windows during 1993 indicate that 90% fall from the first and second stories and that 45% had injuries defined by the CPSC as "serious," such as fractures, internal injuries, concussions, intracranial hematomas, and intracranial hemorrhages. Of those injured, 28% were admitted to the hospital compared with 4% for all consumer product-related injuries reported to the CPSC during 1993. Approximately one third of children sustained only minor injuries, such as contusions, abrasions, and lacerations.<sup>11</sup> These are usually young children who fall 1 or 2 stories. Fractures are the most common of the serious injuries and the radius, ulna, and femur are the most frequent sites.<sup>11,16,17</sup> Rib, spine, pelvis, and calcaneus fractures are much less common among children than among adults. Children tend to use their arms to protect their heads, and they have relatively flexible bones.<sup>11,15,17</sup> Multiple fractures are common, especially those resulting from falls from greater heights. Craniocerebral trauma is frequent, particularly in fatal falls.<sup>15,17</sup> Abdominal and chest injuries are relatively uncommon in falls from 1 or 2 stories, but they are more frequent in falls from greater heights and in fatal falls.<sup>5,10,15,17</sup> In general, the greater the height from which the child falls, the more severe the injury. However, the nature of the surface onto which the child falls (concrete and trash are most common; softer surfaces improve outcome<sup>13,14,18</sup>) and the degree to which the fall is broken on the way down modify the pattern and sever-

The recommendations in this statement do not indicate an exclusive course of treatment or serve as a standard of medical care. Variations, taking into account individual circumstances, may be appropriate.  
PEDIATRICS (ISSN 0031 4005). Copyright © 2001 by the American Academy of Pediatrics.

ity of injuries.<sup>5,6,11,14–16,18</sup> Children younger than 3 years are much less likely to have serious injuries than older children who fall the same distance. It is thought that, because younger children have more fat and cartilage and less muscle mass than older children, they better dissipate the energy transferred by the fall.<sup>11</sup>

Because witnessed falls of 2 stories or less usually do not result in serious injury, child abuse should be considered in children with serious injuries from falls that were reportedly from lower levels, especially if the fall was unwitnessed.<sup>19–22</sup> One large series reported that about one fourth of the falls were “not accidents”; some children jumped to avoid beatings or fires, some were pushed by siblings or parents, and some attempted suicide (all the suicide attempts were adolescents).<sup>14</sup>

Permanent physical sequelae—primarily orthopedic problems related to fractures and neurologic problems ranging from mild to severe—occur in 4% to 22% of children who survive serious falls.<sup>10,11,13,14,17</sup> One study reported a significant incidence of posttraumatic psychiatric and behavior problems.<sup>14</sup>

The economic costs of these injuries from falls are considerable. In Los Angeles County, where falls are possibly less frequent than in the northeast, the annual hospital charges from 1986 to 1988 were more than \$600 000, or about \$5000 per child admitted with fall-related injury; almost half of these charges were paid by public assistance.<sup>14</sup> Data compiled by the National Center for Health Statistics National Hospital Ambulatory Medical Care Survey for 1992–1994 revealed a national cost of \$958 million for emergency care for children who were seen for falls. Although fewer than 3% were falls from buildings or extreme heights, they would still account for almost \$10 million annually, including 26% paid by Medicaid.<sup>23</sup>

Case series have reported predisposing factors for fall injuries: a history of previous major unintentional injury to the patient or siblings; neurologic disorders, such as seizures, developmental delay or hyperactivity; and documented parental neglect.<sup>5,8,10</sup> The families of the victims are more likely than the general population to experience social and demographic factors such as poverty, single-parent households, inadequate child care, and acute stressors such as recent moves, illnesses, and job changes.<sup>8</sup> Some central-city residents may have moved recently from rural areas and may be unfamiliar with the hazards of living in multiple-story dwellings.<sup>5</sup>

## PREVENTION

A number of strategies, some of which have documented effectiveness, have been suggested to prevent children falling from heights. Parent counseling has been effective in preventing infant falls and other injuries and should be part of any prevention program.<sup>20,22,24–26</sup>

Considerable success has been reported with modification of the physical environment. Spacing of railings determines how well they function to prevent falls from balconies, decks, porches, and bleachers.

Widely spaced rails are ineffective barriers because they permit a child’s body to slip through.<sup>27</sup> Virtually all children younger than 6 years can slip through a 6-in opening, and none older than 1 year can pass through a 4-in opening.<sup>27</sup> This information resulted in the adoption of the 4-in spacing by all 3 of the regional building code organizations in the United States. To prevent falls from balconies, the building codes in many communities now require railings through which a child cannot pass.<sup>28</sup> All local building codes dealing with new construction should be made to conform with the national codes that currently recommend 4-in openings between vertical (not horizontal) bars. Because the codes apply only to new construction, retrofitting of older dwellings also should be encouraged. Most codes specify railing heights of 36 in. Although an increase of railing height to 4 to 5 ft would add protection, aesthetic concerns are likely to impede any efforts for change.

Outside fire escapes are unnecessary in modern buildings that use fire-resistant techniques such as internal fire stairs, but it is unlikely that outdoor escapes can be eliminated from older housing, and is it unlikely that urban housing will be air-conditioned, reducing the need to open windows during hot weather. Providing safe ground-level play areas with climbing equipment has been suggested as a strategy for avoiding the falls from heights related to children playing on fire escapes and roofs.<sup>6</sup>

Because the majority of serious injuries are related to falls from windows,<sup>13,14,17</sup> strategies designed to prevent these falls should have a substantial effect. Modern window screens, although easily removable to allow for escape during residential fires, are designed to keep insects out of the house and do not provide a barrier to falls.<sup>24</sup> “Child safety” window screens made of steel are available and are used in new construction in some areas. These screens can withstand 67.5 kg (150 lb) of pressure, similar to the standard for window guards, and need replacing less often, but adding them to existing construction would be costly.

The installation of window guards is a proven preventive strategy. In 1976, the New York City Board of Health, noting that window falls accounted for 12% of deaths from unintentional injury of children younger than 15 years, passed a law requiring the owners of multiple-story dwellings to provide window guards in apartments where children 10 years and younger reside. This law was passed after the implementation of a pilot program combining education with the provision of free window guards. The pilot program resulted in a 35% reduction in deaths attributable to falls from windows and a 50% reduction in incidents; no child fell from a window equipped with a window guard.<sup>7</sup> The mandatory program resulted in a reduction of up to 96% in admissions to local hospitals for the treatment of window-fall-related injuries.<sup>14</sup> Follow-up through 1993 revealed a continuing downward trend.<sup>29</sup> Education is important for teaching the appropriate installation of window guards. Despite the proven effectiveness of window guards, other major cities have been slow to adopt similar codes. The building

code in Chicago requires window guards if the height of the window sill is less than 2 ft above the floor, but enforcement is reportedly ineffective.<sup>10</sup> A voluntary ordinance in Boston encourages but does not mandate landlords to install window guards. The first 2 years' data after initiating this program showed an 83% decrease in hospitalizations for the treatment of injuries attributable to falls from windows, and there were no deaths, compared with 3 deaths during the 2 years preceding the program.<sup>30</sup> A survey of building codes in several states found no regulations requiring window guards, although New Jersey has since passed a law similar to that of New York City.<sup>31</sup> Some states prohibit or limit window guards in the interest of providing fire egress.<sup>13</sup>

One survey of hardware stores found that the only devices available were specifically designed and advertised to keep intruders out; they were recommended for use on first floor windows.<sup>13</sup> These devices were expensive (approximately \$50) and difficult to install.<sup>13</sup> Security devices are designed to keep people out, and window guards are designed to keep people in—except for necessary egress in the event of fire. It is easier to find inexpensive window guards (starting at \$6) in cities where window guards are required, especially when public health programs have developed networks of stores that offer them. Window stops are available that prevent sliding windows from opening more than 4 inches. They are available at hardware stores for around \$2 and are easy to install. Window guards can be obtained to fill the entire opening of a sliding or casement window. However, currently designed window guards are best suited for double-hung (sash-hung) windows. If the guard does not fill the entire opening of the window, additional devices, "L-stops," also are recommended to restrict the opening of the window above the top bar of the guard to no more than 4.5 in. L-stops are not to be used on windows designated for egress, that is, windows that are located less than 75 ft above the ground.<sup>32</sup>

Fire protection professionals have great concerns about the use of *fixed* window bars (security bars) that prevent egress or access by fire fighters. It is important to install *operable* window guards that can be released or removed without the use of a separate key or excessive force. Operable guards must be too difficult for a child to release but easy enough for an adult or teenager to release. Examples of operable guards include built-in bars that appear automatically as the window is raised, guards on a hinge that swing in when a "pin" is released, and a slide-out model that requires the simultaneous depression of 2 pins for removal. Fire codes in some communities prohibit the use of fixed bars on emergency and fire escape windows. Organizations of fire protection professionals decry their use, especially on first and second floors, but data are scarce that would permit the risk-benefit consideration of the use of operable guards, especially on higher floors.<sup>33</sup> Recent data on the New York City experience showed no increase in the number of deaths attributable to residential fires (in fact, there was a decrease) after the introduction of window guards as required by city ordinance.<sup>29</sup>

## RECOMMENDATIONS

- Pediatricians should give the following anticipatory guidance about prevention of falls from heights to parents of children who live in multiple-story dwellings:
  - Supervise small children at all times, especially if windows are open.
  - Install locks on windows to prevent sliding windows not intended for egress from opening more than 4 in.
  - Open double-hung windows from the top only.
  - Fixed guards, commonly used to prevent intrusion, should not be used, because they may prevent egress in the case of fire.
  - Install operable window guards on second- and higher-story windows (unless prohibited by local fire regulations). Window screens are designed to keep insects out, but because they are not strong enough to keep children inside, they will not prevent falls from windows.
  - Discourage or prohibit children from playing on fire escapes, roofs, and balconies, especially those that are not adequately fenced with vertical bars that have openings of 4 in or less. Encourage the use of ground-level safe play areas, such as public parks and playgrounds. Ideally, these areas have been inspected and found safe by a nationally certified playground inspector.
  - Avoid placing furniture, on which children may climb, near windows or on balconies.
- Pediatricians should advocate for community-wide programs to encourage the use of window guards. Public health authorities, in conjunction with fire prevention officials, should guide such programs so that regulations may be based on concerns about both fire safety and fall prevention.
- The American Academy of Pediatrics (AAP), state chapters, and local pediatricians should work with manufacturers of windows and window guards to encourage them to develop and make more widely available additional products that can prevent falls and allow egress in fires. Examples are windows that cannot be pushed out or up by a child and window guards with safety catches that can be operated only by adults.
- Legislation requiring landlords to install releasable window guards or window stops above the ground floor in multiple-story dwellings where children live should be developed. Community outreach and education are important components of programs to prevent falls from heights. In many cities, the local government housing authority, a major landlord for low-income people, along with the AAP state chapters and local pediatricians, should take the lead in encouraging the installation of window guards.
- Building codes should ensure that balconies, decks, porches, bleachers, roofs, and fire escapes have railings with vertical openings not greater than 4 in.

6. Local communities and recreation departments should develop strategies to reduce the number of children playing in dangerously high places. Such strategies might include the expansion of safe public playground activities, including child care and recreational programs, as well as attempts to make streets and public areas safer for children by implementing programs such as neighborhood watch and crime prevention.
7. Whenever possible, grass or shrubbery should be planted at the bases of tall buildings to soften the impact surface.

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